12: Marshall E-5 (1951-1959) 1961 FX10 Bushmen FX10
Kung

can afford to be a little luxurious. They rub it on themselves and on their implements and they eat it. ≠Toma said that, when he had eland fat to give, he took shrewd note of certain objects he might like to have and gave their owners especially generous gifts of fat.

Real property and the sources of food and water are owned by the headman for the band and cannot be given away. However, meat, once it is distributed after the hunt, and veldkos, once it is gathered, become private property and may be given. Artifacts are privately owned by the individual man, woman, or child, as outrightly owned if received as a gift as if made by the individual. They borrow and lend a great deal—in itself this is one of the ways they support each other and aid themselves in maintaining social solidarity—but this does not blur the clarity of ownership. Each object acquires some markings of its own from the maker and from usage. It is easy for the /Kung, with their highly developed powers of observation and visual memory, to keep track of the commonest objects, know the ownership, and remember the history of the gifts.

As far as we know, no artifacts or materials are taboo as gifts. For instance, women may be given weapons, although it is taboo for women to touch them.

In quantity the gifts varied. One which /Ti/kay gave to ≠Toma was considered generous. It was a fine ostrich egg shell headband, three ostrich egg shells, and a well-tanned duiker skin as soft as suede. Another generous gift consisted of a knife, a spear, and a triple string of traded white European beads. Often gifts were less. The feelings persons have for each other, the degree of their past indebtedness, what they happen to possess and can give, determine the generosity of the gift.

The acquisition *per se* of the objects was seldom, I believe, of primary importance to most individuals in gift-giving—that is, if the objects were their own artifacts. As the /Kung come into more contact with Europeans—and this is already happening—they will feel sharply the lack of our things and will need and want more. It makes them feel inferior to be without clothes when they stand among strangers who are clothed. But in their own life and with their own artifacts they were comparatively free from material pressures. Except for food and water (important exceptions!) of which the Nyae Nyae /Kung have a sufficiency—but barely so, judging from the fact that all are thin though not emaciated—they all had what they needed or could make what they needed, for every man can and does make the things that men make and every woman the things that women make. No one was dependent upon acquiring objects by gift-giving.

They lived in a kind of material plenty because they adapted the tools of their living to materials which lay in abundance around them and which were free for anyone to take (wood, reeds, bone for weapons and implements, fibres for cordage, grass for shelters), or to materials which were at least sufficient for the needs of the population. The Nyae Nyae /Kung had hides enough for garments and bags; they kept extra hides when they needed them for new garments or when they wanted them for trade; otherwise they ate them. The /Kung could always use more ostrich egg-shells for beads to wear or trade with, but, as it is, enough are found for every woman to have a dozen or more shells for water containers—all she can carry—and a goodly number of bead ornaments.

In their nomadic hunting-gathering life, travelling from one source of food to

15: Marshall E-5 (1951-1961) 1965
FX10 Bushmen FX10
!Kung

square miles, centered approximately at Gautscha (about 19°48'30" S, 20°34'36" E). The region lies for the most part in South West Africa, but extends into the Bechuanaland Protectorate to a number of Tswana and Herero settlements along the border. We arbitrarily call this particular stretch of country a region because it is a region in the minds of the Bushmen. In it are some 27 bands living independently in their own traditional way and 9 groups employed by the Tswana and Herero—a !Kung population of about 1000. These !Kung intermarry. They have not formally structured the region as an endogamous unit, but they remain within it by custom and preference. They know there are other !Kung-speakers living to the north and northwest of them, but consider them strangers, as they do the Auen-speaking and Naron-speaking Bushmen to the south.

ECONOMY

It is vividly apparent that among the !Kung Bushmen, ethos, or "the spirit which actuates manners and customs," is survival. Their time and energies are almost wholly given to this task, for life in their environment requires that they spend their days mainly in procuring food. The band organization is important to their survival, and, to secure the mutual support and companionship that it affords, they seek to regulate their social actions to reduce tension and potential hostility among the individuals within the band. They also strive to avoid the possibility of conflict between bands. Similarly, in their religious concepts and practices, the emphasis is on survival in this life on earth, not a looking forward to the eternal life in the sky after death.

WILD PLANT FOODS (*veldkos*) • The !Kung of the Nyae Nyae region have no agriculture. They subsist mainly on wild plant foods, which we refer to by the convenient Afrikaans word *veldkos*. The game the hunters of a band manage to kill is an important part of their diet and much desired, but it is by no means the daily sustenance. In this region the !Kung know more than a hundred different kinds of veldkos (cf. Story 1958). Several species of berries exist, dry and hard for the most part. A few fruits ripen suddenly in a short season. Leaves, resembling spinach, make a spring salad for a short time. Morsels of gums from certain trees are cherished like sweets. Tsama melons and wild cucumbers grow here but do not abound in this region as they do in some other parts of the Kalahari where some Bushman groups can live on them for certain seasons without having access to any water. Most important to the daily sustenance of the Nyae Nyae !Kung are the edible underground roots, tubers, and storage organs of certain drought-resistant plants. We observed the gathering of 23 different kinds of these; doubtless there are more. In addition to the roots and tubers, there are sev-

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On the Move A Bushman hangs his possessions on a carrying stick and thrusts his assegai under the stick in back to distribute the weight onto both shoulders.

222 When the people go to gather mangettis or tsī the men always ac-
462 company the women and help to gather and to carry the heavy loads—as much as they possibly can—back to the water hole.

Though the men help, especially with *tsī* and mangettis, gathering and digging are the work of women and the work that takes up the greater por-
222 tion of their energy and time throughout their lives. Their digging imple-
[412] ment is a sharpened, unweighted stick about three feet long. When we were
[101] living with the Gautscha bands at the Gautscha water hole in the dry season, the women went to gather every day or every second or third day, depending on the distance and on how much food they could carry back. They would plan which patch or fertile area to go to and start out in small groups, some
[484] to one place, some to another. They would walk five or ten or fifteen miles
[361] to their destination and then pick berries or dig roots, which may lie two feet or more under the ground, until the mid-afternoon, and then start back
[854] to the werf (campsite) at the water hole. They carry their infants tied to
[482] them, small children on their shoulders, and the loads of veldkos in the
[372] bulges of their karosses (skin capes). When they near the werf, they pick up two or three logs for the night fires.

The veldkos that each woman gathers belongs to her and with it she feeds her own family, sharing with whatever relative or friend she wishes. Custom does not require her to share it in a systematic way with others as
252 meat must be shared. She cooks her veldkos in the coals and hot ashes,
264 pounds fibrous roots and hard berries in her mortar, and serves the food to her family as a family meal, usually in the evening. During the day, however, people may cook and eat little snacks at odd times.

222 Although there are numerous kinds of veldkos, we must not give the
● 433 impression that there is a great abundance. In fact, the opposite is true. Food
231 is scarce all over the arid Kalahari, where drought is the scourge on all—the cattle raisers, the dry farmers, and the gatherers of the wild foods.

628 There has been much intermarriage in the Nyae Nyae region. Families
166 therefore may have close relatives—with whom they have the right to live—
[582]

15: Marshall E-5 (1951-1961) 1965
FX10 Bushmen FX10
!Kung

They hang meat in the bushes to dry and can keep it for some time. It is not uncommon for them to eat quite sparingly and save bits for a coming journey or against a future day of hunger, as they eat sparingly of mangetti nuts and *tsi* when they must make a supply they have carried from a great distance last as long as possible.

The !Kung are well accustomed to restraining themselves in regard to food. Thus when a visitor comes to a fire where people are preparing food or eating, he should sit at a discreet distance, not to seem importunate, and wait to be asked to share.

Although the hunters supply only about a fifth of the people's food and the women four fifths, the women play a dependent role in !Kung society. Nevertheless, the men do not ill-treat the women and require no extreme form of obedience or subservience of them.

The primary factor in the dominance of the men is undoubtedly strength. !Kung men are small and slender, but they are wiry and vigorous and, with their strength, they carry and protect the very life of their people.

Another factor that brings men clearly forward is the character of hunting and its reward. Women bring the daily food, but there is nothing splendid about returning with vegetables and wood. Many of the vegetable foods, furthermore, are rather tasteless and harsh and are not very satisfying. The return of the hunters is vastly different. The intense craving for meat, the anxiety that goes with the hunt, the deep excitement of the kill, finally the eating and the satisfaction reach to the very core of the people, engaging powerful emotions. Once a young man, /Qui, who was said to be the best hunter in the region, had been charged by a magnificent cock ostrich on a big open pan where there was no refuge. He knelt, facing the creature, until it was within close range and shot an arrow straight into its heart. Back in the werf, while the meat was being cut up and distributed by /Qui's wife's brothers, he slept exhausted on the mound of black and white plumes and the women—some of the plumes in their hair—danced a dance of praise around him. This is the role of !Kung hunters.

MATERIAL CULTURE

HOUSE TYPE AND SETTLEMENT PATTERN • The building of the scherm—the Bushman reed-and-grass dwelling—is women's work, associated with vegetation and gathering. Each woman builds for her own family. However, unless no better shade can be found or unless it is raining, the women often do not bother to build these shelters. Especially after the long days of walking, it is easier just to settle in the bushes.

In the Nyae Nyae region, wood and grass are everywhere, and a woman can gather her material and build her scherm in less than an hour. She breaks up flexible branches about six feet long, digs holes with her

177 As far as is known, all Bushmen hunting today have had
411 metal weapons, and utensils and clothing of European manu-
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291 facture for at least 40 years.

162 Among the 34,800 Bushmen classified as non-hunting,
• 433 there are, of course, many degrees of economic development. At one extreme, there are the second generation farm Bushmen of the Grootfrontien, Gobabis and Ghanzi Districts who have permanently given up the traditional subsistence round. Other farm Bushmen spend the rainy season living in the veld and work on the farms only in the winter dry season.

Many of the Bushmen in Ngamiland and the Crown Lands have made an excellent adjustment to modern conditions. For instance the Mababe and Pandamatenga people enjoy a settled village life combined with hunting for cash furs with rifles and steel traps. Many of the men work for hunting safaris where they have gained a good reputation as trackers and gun bearers.

433 The distribution of the various economic patterns is plotted on Map 4. There are four categories:

1. Full time hunting and gathering
2. Bantu-associated peoples with traditional lord-client relations
3. Independent villages with cash hunting and wage labor
4. European farm workers

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16: Lee E-5 (1963-1965) 1966 FX10 Bushmen FX10

16: Lee E-5 (1963-1965) 1966 FX10 Bushmen FX10
!Kung

Since
131 the Nyae Nyae peoples are closely linked genealogically to
133 the peoples of /"ai/"ai, /Gam, and !angwa, and since their
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619 several territories are surrounded by an uninhabited belt 60-100 miles in width, it seems more useful to include all the central water sources under the term "interior" and consider all the other river dwelling and farm !Kung as peripheral (see Map 7, p. 37).

121 This description of the subsistence ecology of !Kung
184 Bushmen therefore concerns the interior !Kung of the central
• 433 dialect division. It is not to be taken as representative of the !Kung in general, the great majority of whom are today living on European farms or working closely with Bantu.[1] It was pointed out in Chapter I that the selection of a study site was dictated by the necessity of finding a Bushman population living traditionally and independently. It was realized at the outset that such a population was not typical of the majority of !Kung.

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[1] A further stricture must be applied to the !Kung of the interior. In 1960 a Government Station was built at Tsumkwe, S.W.A. Since then the 800 interior !Kung on the South West African side of the border have settled there and are receiving instruction in agriculture. The 400 !Kung on the Bechuanaland side of the border have not been permitted to participate in this program. Therefore, during the period of the present study, only the interior !Kung in Bechuanaland were leading a year-round hunting and gathering way of life.

16: Lee E-5 (1963-1965) 1966 FX10 Bushmen FX10
!Kung

V. SUBSISTENCE ECOLOGY: AN OVERVIEW OF PLANT AND ANIMAL RESOURCES

121 The concept of a hunting and gathering way of life has assumed a misleading connotation in the ethnographic literature. The term has come to imply a random precarious existence searching for food, an eking out of subsistence [433] of odds and ends. Since the present study is the first detailed analysis of the food habits of non-agricultural people, it should be stated at once that the Bushman subsistence is based on a systematic strategy of exploiting abundant food 222 resources. Very little of their food gathering is left to chance. Their knowledge of the local environment, of the habits of game and the growth phases of food plants is virtually exhaustive. In other words, the Bushmen know where the food is at each season of the year and they arrange their schedule of activities to take maximum advantage of these resources. They do not allow themselves to get into difficult situations, and even during the season of scarcity they have available several alternative strategies of getting food and water.

262 The security of their life is in part due to the fact 137 that the basis of their subsistance is plant foods which are 136 abundant, local and predictable. Meat is of secondary importance in the Bushman diet. Game animals, by contrast to

262 plants, are scarce and unpredictable and people never depend
137 on meat for their basic subsistance. Therefore the well-
136 being of the Bushmen as a population can be viewed as the
433 product of two factors: the abundance of food resources in their environment, and the intelligence and sophistication which informs their exploitation of these resources.

512 Although the getting of food is the major activity of
433 Bushman life and is a major focus of Bushman thought, the greater part of the waking life of the Bushmen is given over to social, religious and trading activities that are largely independent of the food quest.

Their emphasis on non-subsistence activities becomes clear when daily records are kept of the activities of the [126] members of a camp. For example, a diary of activities was kept for the Dobe camp during July, 1964. This record was made during mid-winter, a season of comparative scarcity. It [462] was found that the 23 adults of this camp spent less than half of their days in subsistence activities, an average of 23% of the time for the women and 40% of the time for the [574] men. The majority of their waking hours were spent visiting [521] other camps, entertaining visitors, resting, talking, hut building, and making tools, clothing, and ornaments.

Plant Resources

137 There are well over 200 species of plants and 220 species
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136 of animals named and known by the Dobe area Bushmen. Of
[126] these 420 species, 350 species were collected and identified
433 by the author. Two-thirds of the plant species and half of
824 the animal species are utilized by the Bushmen. Of these,
825 they classify 85 species of plants and 54 species of animals as edible. It is therefore evident that the Bushmen have a remarkably broad subsistence base. On closer examination, however, one finds that the Bushmen are highly selective in their food habits. In fact, only nine species of plants constituted about three-quarters of the total vegetable diet; and one species alone, the mongongo nut, accounted for at least half of the total. Furthermore, of the 54 animal species eaten, only 17 species were consistently hunted.

824 A plant species may be regarded by the Bushmen as a
262 major food for one or more of several reasons. Certain foods are prized because of their abundance or because of the long season during which they are available. Other foods are prized because of the ease with which they are collected. For this reason fruits are generally more popular than roots since the latter have to be dug out of the ground. Then there are foods which are especially good tasting and/or believed to be highly nutritious. The various plant foods are evaluated pragmatically and rationally and few species
825 are restricted by magico-religious taboos. This is in sharp
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824 of summer foods such as the berries of Grewia spp. and melons of the Citrullus vines, and a selection of winter foods such as roots of the genera Vigna and Coccinia, and edible gums from the genera Acacia, Terminalia, and Burkea.

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824 No two territories have the same constellation of plant foods and no single territory provides the complete inventory of 85 species of plant foods. The Bushmen are well aware of the variations in plant resources between the several territories and there is general agreement on the "strong" and "weak" points of each territory. For instance, !ubi is famous for its Baobab fruits (Adansonia digitata), a food which most other territories lack. /ai/ai is known for the abundance of its wild orange trees (Strychnos spp.) but is considered "weak" in vegetable ivory palms (Hyphaene ventricosa) which are rare south of the Aha Hills. Dobe, on the other hand, is said to be "strong" in vegetable ivory palms and "weak" in the wild orange trees. Bate is famous for its groves of trees bearing the morula nut (Sclerocarya caffra) but is "weak" in trees bearing the mongongo nut
[92] (Ricinodendron rautanenii). Furthermore, local variations in seasonal rainfall may produce an abundance of food in one territory and leave another territory with a food scarcity.

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433 The important point is that every territory has enough food to sustain at least some of its members throughout the

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433 year, but that territorial arrangements are flexible enough to permit people to collect and eat freely in territories other than their own. Thus there were no instances recorded of the members of one camp going hungry while there was still food available at other camps.

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602 Ecologically, the net effect of this flexibility of territories is to produce an equitable distribution of food resources throughout the population. Kinship, real and fictive, is the social mechanism which makes possible this equitable distribution. Each independent camp maintains ties of kinship and marriage with members of every other independent camp. Implicit in every kinship tie is an obligation to share food and water. When relatives are living together, the obligations are manifested in daily exchanges of food and in mutual aid. When relatives are living at

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574 different camps these obligations are latent. An individual who visits another camp will invariably set up his or her hut beside the hut of the member of the other camp to whom he or she has the closest kinship tie. The visitor is secure in the knowledge that the members of the camp will respect his or her claim to the resources of the area.

The principles of intercamp visiting will be illustrated by an example from the Dobe camp. N!ain!a, a woman about 55 years old, is a member of the Dobe camp. She is a younger

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574 sibling of the leaders of the two Dobe camps, and therefore has an unquestionable claim to the Dobe resources. N!ain!a has two married daughters whom she frequently visits. One lives at !angwa and the other at Bate. These two daughters and their husbands make reciprocal visits to Dobe about once a month. N!ain!a has a classificatory uncle at !ubi. During the winter she would make daily trips to collect the Baobab fruits that are available only at !ubi. Her uncle, in turn, would make reciprocal visits to collect the vegetable ivory fruits which are abundant around Dobe. Thus N!ain!a maintains active claims in three of the territories adjacent to her own.

N/eysin!a (N!ain!a's older brother) is unlike N!ain!a in that he prefers to remain in his home territory rather than visit other camps. N/eysin!a's kinship ties with members of other camps are numerous but the reciprocal obligations implicit in these kinship ties remain latent because N/eysin!a rarely visits his relatives in other camps.

361 Inter-territorial visiting is perhaps the most important single principle of land utilization among the Dobe area Bush-

311 men. Concerning land utilization <u>within</u> the individual territory, three significant features should be noted.

First, each of the territories borders on an uninhabited hinterland of indefinite size (see Map 14). Because of this, it is difficult to derive an estimate, in square miles, of the

16: Lee E-5 (1963-1965) 1966 FX10 Bushmen FX10
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VIII. WATER AND THE SEASONAL ROUND

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The Kalahari desert is not a food poor area. Most of it is situated between the 10 and 20 inch isohyet and therefore it is marginal for cultivation (without irrigation), but the desert supports a remarkable abundance and variety of edible wild plants which have become genetically adapted to arid conditions.

Geographers have classified the Kalahari as "desert" because of the lack of surface water (Wellington 1955 etc.). This in turn is a function of the sandy terrain which supports surface water only during a brief summer season. In the few localities where the underlying geological formations are exposed, permanent standing water is found. And these point sources of water are usually surrounded by waterless belts of up to 200 miles in width. Edible plants on the other hand are widely distributed both in the immediate vicinity of water and at considerable distances from it. The geographical separation of food and water in certain seasons is the critical problem of !Kung Bushman subsistence.

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This is not a major problem during the rainy season when seasonal standing water may be found in close proximity to the concentrated food resources. Nor is this a major problem during the early winter when food is available around the

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824 permanent water sources. Nevertheless for one season every year Bushmen must face a situation in which major foods and permanent water are a considerable distance apart. How Bushmen arrange their lives to meet this situation will be illustrated by data from the Dobe area !Kung Bushmen.

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222 According to the Bushmen, water has always existed in the eight permanent waterholes of the Dobe area. Seven of these waterholes are situated in or near the dry bed of one molapo, the !angwadum. The eighth, 25 miles to the south, is in the bed of another molapo, the /ai/aidum. These molapos lie in the center of a belt of flatlands which varies in width from 5-10 miles. It was pointed out in Chapter IV that the molapos interrupt the basic system of parallel dunes that cover most of the northwestern Kalahari. But it is only on these dunes that the primary Bushman food, the mongongo nut, is found. The result is that each of the eight waterholes is three to seven miles distant from the nearest grove of mongongo nuts. Thus gatherers who are camped at a permanent water must make a minimum daily round trip of six to fourteen miles in order to gather mongongo nuts. As the nearest nuts become exhausted the round trip distance becomes greater and greater, until it reaches a distance that is too far to walk in a day. This distance varies from camp to camp but 12 miles (6 miles out and 6 miles returning) was close to the maximum that the

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222 where the water bearing root Fockea monroi is available the Bushmen may extend their stay in the nutting groves by eating the juicy pulp of this root. If they are fortunate, this water source may tide them over to the next shower, part of which will accumulate in the hollows of trees.

13 The first rainfall, however brief, appears to have the general effect of triggering reproduction in animals, and initiating the growth phase in plants. Among the first of the summer foods to appear are the leafy greens Dipcadi glaucum and Talinum crispatulatum.

132 There is no well-defined boundary between the first rains of October and the main rains. J. Marshall mentions that during his periods of field work a gap occurred between the first and the main rains. In 1963 and 1964, however, the showers gradually increased in intensity and frequency from [433] October through December. The date of onset and the intensity of rainfall varies greatly from year to year and a delay of even a few weeks in the onset of rain can cause considerable hardship amongst the Bushmen. Furthermore, an initial rain followed by weeks of dry weather is a mixed blessing, for it brings the plants prematurely into leaf and they become scorched and damaged by the subsequent sunshine.

In 1963, the first rain fell on 8 October. In 1964, it did not fall until the 11 November and one noticed that the

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433 physical condition of the Bushmen was visibly poorer in November 1964 by comparison with November 1963.

2. Main rains

132 The Bushmen say that a series of intense downpours
361 (measuring 2-3 inches) heralds the beginning of the main
[821] rains and ushers in their season of abundance. Such a fall occurred in 1963 at the end of November. The immediate effect of these downpours is to produce standing water in the small molapos that lie in the interstices of the dunes. When these seasonal waters become established, virtually the entire Bushman population moves out to live at them. Thus from December through March the permanent waterholes are largely deserted.

312 With the coming of the main rains, the summer foods
433 begin to ripen. These foods appear around the summer water
222 sources and they appear also around the permanent waterholes. It is significant, that, although foods become available at the permanent waterholes, the Bushmen tend to avoid these foods. They prefer to eat the foods that are around the summer waters. This illustrates one way that the Bushmen take maximum advantage of the more distant foods. They defer exploitation of the foods around the permanent waterhole until the winter when the alternative water sources have dried out.

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[162] 30 or more people) and Bantu cattle posts. These were located at Characharaha, Mahito, !gun/isa and /wihabe. Map 18 illustrates the distribution of population during the late summer (March 1964). p. 159.

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222 Life at the summer pans is, by Bushman standards, luxurious because all of the major and minor fruits, berries, melons and leafy greens become available. There is a succession of ripening of the major foods throughout the summer months. The first to ripen are the leafy greens (Dipcadi and Talinum), followed by the sour plums (Ximenia caffra and X. americana), then the melons (Citrullus lanatus and C. naudinianus), and the Grewia berries (Grewia flava comes first followed by six other species). By the time the plums have become scarce the melons are ready for eating. As the melons become worked out the Grewia berries ripen. Each of six species of Grewia comes into ripeness at a different time, so that every two weeks throughout the middle of summer another species of Grewia became ready for eating. Throughout the early part of the summer the mongongo nuts are available but these are the nuts from the previous year's fall. It is not until April that the current year's fall of nuts occurs. And then a new cycle of working out from the camp occurs. This illustrates again the selective gathering habits of the !Kung Bushmen.

000 meat no doubt lessens the men's incentive for hunting.

221 3. Autumn - which fell (in 1964) during April is the period
312 when these large summer waters are drying up. One by one the
361 big pans turn into muddy pools and the Bushmen abandon them. Some of the people join the camps established at the remaining summer waters while others fall back to their permanent waterholes in the main molapos.

!Gauša was the last of the summer waters to go dry. It was finally abandoned by May 1, 1964. By this date all the Bushmen had returned to the permanent waters and this marks the beginning of the winter subsistence cycle.

As mentioned previously the present study was made during a drought. There are indications in the literature that summer waters do not always dry out as early as May 1. The Bushmen themselves spoke of summer water persisting in previous years into the period of frost which does not come until June or July. It is also probable that the presence of Bantu cattle contributed to the premature drying out of the summer waters. However, these hypotheses cannot be tested except by further field work.

4. Early Winter

221 The winter season is not coterminous with the period of
312 food scarcity. This scarce period does not begin until mid-
• 433 winter and continues until the first rains. The first half

221 of winter from May to mid-July is a period of relative abun-
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433 dance. This is due to the fact that the permanent waters
[361] have not been occupied during the summer months, and there is abundant food in their vicinity when the Bushmen return to
[824] them in May. Subsistence has a double base, including both the tail-end of the summer foods such as the Grewia berries, and the first series of winter roots and bulbs. Mongongo nuts are also locally available. The distribution of the Bushmen population during the winter of 1964 is shown in Map 19, p. 165.

221 The root foods are generally associated with the winter
824 subsistence. This is curious because as perennials the bulbs may be dug out at any time of the year. But the Bushmen do not concentrate on root foods during the summer months: they pass them over in favor of the foods of shorter duration, the fruits and melons. They state that they do not like the flavor of the root foods during the winter.

In May and June these root plants are exploited and the pressure on them increases through the winter as the nuts become locally exhausted. The major roots are Eulophia spp., Vigna dinteri, Walleria muricata, Coccinia spp., Coccinia rehmannii and Ceropegia spp. - nine species in all. These have edible bulbs or storage organs which range in size from one to three inches in diameter.

[TEXT CONTINUED ON PAGE 166]

TABLE 7

221 The kills made by the hunters of the Dobe camp during a 28-
224 day period (6 July to 2 August 1964).
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Date	Hunter	Species	Technique	estimated weight of meat
July				
7.	≠oma	wart hog	with dogs	80 lbs.
7.	≠oma//gwe	steenbok	snare	12
9.	/ase	steenbok	snare	12
17.	≠oma	wart hog	with dogs	80
20.	≠oma	wart hog	with dogs	80
20.	≠oma//gwe	honey badger	snare	10
20.	≠oma//gwe	python	collected	20
21.	/ase	steenbok	snare	12
23.	n≠eysin!a	steenbok	snare	12
23.	≠oma//gwe	hare	snare	3
24.	≠oma	bat-eared fox	with dogs	4
27.	/ase	hare	snare	3
27.	≠gau	korhaan	snare	2
27.	n≠eysin!a	korhaan	snare	2
28.	≠oma	wart hog	with dogs	80
29.	≠oma//gwe	kori bustard	snare	10
30.	n≠eysin!a	steenbok	snare	12
31.	/ase	porcupine	cornered in burrow	20
				454 lbs.[1]

[428] [1] In addition to the meat from these 18 kills, the Dobe Bushmen received gifts of meat from other camps. The weight of meat from these outside sources is estimated at 36 lbs. Therefore, the total meat eaten at Dobe was around 490 lbs.

221 Unfortunately spring is the most difficult season for the
433 Herero as well as for the Bushmen. The good grazing for livestock is miles distant from the waterholes. Consequently the cattle are in poor condition and their yield of milk is low.

251 It would be useful for the Bushmen to amass a surplus of food in anticipation of this scarce season. However, none of the 15 independent camps observed ever kept more than a few days supply of vegetable foods on hand. Surplus accumulation was not a feature of Bushmen food strategy except for one instructive case.

There was a noticeable attempt to create a small surplus
251 in the form of dried meat and hides. Each family maintained
285 a storage basket in the crotch of a young tree. By weaving a framework of branches and palm fronds and lining this with grass, they built up a rough basket for storing weapons, water containers and small amounts of food. The storage basket was built five feet above the ground which kept its contents safe from the reach of dogs and children. If a day's hunting had been unsuccessful, the members of a camp could invariably produce an emergency ration of dried meat or, more often, dried hide for the evening meal. People saved scraps of dried hide of kudu, gemsbok and wildebeeste from kills made weeks or
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252 months previously. These scraps were softened by boiling or
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221 this account of the seasonal round has come full circle to the starting point.

312 In summary, there are, in effect, only three basic sets
• 433 of subsistence conditions for the Bushmen:

1. Water everywhere - Food everywhere

2. Water limited - Food abundant

3. Water limited - Food scarce.

221 When the first set of conditions prevail during the rains
312 of November through March, Bushman life is sweet. The camps
433 can live near the most concentrated food sources within their
[628] territory, or share in the food supply of neighboring camps,
[574] or easily undertake the long trips to visit relatives at
[602] distant waterholes.

When the second set of conditions prevail, from April through July, freedom of movement is more restricted but food is still abundant enough to make life comfortable.

When the third set of conditions prevail, from August through October, the Bushmen must resort to increasingly arduous tactics in order to maintain a good diet, or, alternatively they must content themselves with foods of less desirability in terms of abundance, ease of collecting and nutritive value.

It is during the three lean months of the year that the Bushmen life approaches the precarious conditions that have

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come to be associated with the hunting and gathering way of life. However one should not lose sight of the fact that for nine or more months of each year the Bushmen can easily fulfill their food requirements without resorting to the more difficult (and, to our eyes, more dramatic) subsistence tactics.

16: Lee E-5 (1963-1965) 1966 FX10 Bushmen FX10
!Kung

IX. FOOD, WORK AND LAND USE AMONG THE !KUNG BUSHMEN

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An observer planning to live with Bushmen is led to expect - from the ethnographic literature - that the Bushmen lead an arduous and exacting way of life, in which the problem of getting food is an overwhelming daily concern. Furthermore I had been told, by local Europeans, that the Bushmen were extremely shy and difficult to find, and that they were always on the move in their endless quest for game. Therefore I was unprepared for the situation in the Dobe area when I first arrived there at the end of the dry season of 1963; for camped at every waterhole were dozens of Bushmen who offered the outsider a hearty welcome and who were seemingly unconcerned by the problem of finding food.

During the course of the study, it became apparent that the Bushman subsistence was more substantial and secure than had been previously supposed. In the foregoing chapters the properties of their hunting and gathering way of life have been described. It will be appropriate, in this final chapter, to review the lines of evidence that bear on the problem of how such a carefree and secure existence is possible in a society of hunter-gatherers living in a harsh, semi-desert environment.

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Abundance of Resources -- The habitat of the Dobe area !Kung Bushmen is rich in naturally-occurring foods. The three distinct plant associations - of the Dune, the Flats, and the Molapo - each support a distinctive constellation of food plants. By far the most important of these is the Dune association and its main constituent, the mongongo tree. From the vast groves of this tree, many thousands of nuts are harvested each year. The mongongo nut, because of its abundance and reliability, resembles a cultivated staple crop such as maize or rice. In terms of nutritional value - proteins and sugars - it even exceeds the cereal crops. Furthermore, it is drought-resistant so that the mongongo nut will still be abund-
[221] ant in dry years when cultivated crops fail. The excellent storage properties of the nut allow it to be harvested in all months of the year. This factor is especially important during the dry winter months when the short-term rainy season foods are not available. It is not surprising, therefore, that when the Bushmen are asked to explain why they have not taken to cultivation, they reply: "Why should we plant when there are so many mongongo nuts in the world?"

Variety of Resources -- The mongongo nut is only one, albeit the most important, of the 85 species of edible plants available to the Bushmen. The existence of this variety of foodstuffs

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824 allows for a wide range of alternatives in subsistence
433 strategy. During the summer months the Bushmen have no prob-
824 lem other than to choose among the tastiest and most easily
221 collected foods; other species which are quite edible but less attractive are simply bypassed, so that gathering never exhausts all the available foods of an area.

During the dry season, when the fruits and melons have gone, the gatherers still have multiple options open to them. They may plan a hike to the molapos to collect the edible Acacia gums, or they may go to the flats to dig out roots and bulbs. Even at the end of the dry season, when the stronger members of a group are making the long hikes to the mongongo forests, the older, less mobile members can derive an adequate subsistence from an eclectic diet of minor foods which are closer to home.

433 Plants versus Game -- The security of Bushman subsistence
222 derives in part from the fact that meat is of secondary import-
224 ance to vegetables in the diet. The !Kung males are persistent, but not particularly successful hunters. Although hunting accounts for over half of the subsistence effort of a camp, meat comprises only 20-40 per cent of the diet. The basis of the Bushman diet is plant food, and meat has come to be regarded as a special treat. When meat is available, it is welcomed as a break from the routine of vegetable foods, but it is never

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224 depended upon as a staple. Strictly speaking, the Bushmen should therefore be regarded as gatherer-hunters rather than hunter-gatherers.

The relative scarcity of game in the Dobe area may be related to the widespread diminution of the large African mammals during historic times. It is worth noting, however, that this diminution of game has not led to the collapse of the Bushman way of life. It is sometimes asserted that the decline of large game has contributed to the extinction of hunting-and-gathering peoples in Africa and elswhere. The evidence from the Dobe area refutes this assertion. The Bushmen there have elaborate and sophisticated methods for capturing smaller mammals, and the meat from these kills serves to supplement a diet primarily based on abundant plant resources. The burden of the evidence from this study suggests that the Dobe area Bushmen do not lead an impoverished way of life.

262 Diet Selectivity -- If the Bushmen were living close to the starvation level, then one would expect them to exploit every available source of nutrition. That their life is well above this level is indicated by the fact that, in a given season, they eat only the most attractive of the vegetable foods, and bypass many other available foods. In their meat eating habits the Bushmen show a similar selectivity. Only a few of the dozens of edible species of small mammals, birds, reptiles, and

121 It is suggested that the delayed assumption of social
433 maturity by the young people and the support of the non-pro-
883 ductive elderly people are institutions which are possible
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182 only in a society with a relatively secure subsistence base.

433 Water, Food, and Nomadism -- The special subsistence problems
312 faced by the Dobe area Bushmen concern the scarcity of water.
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361 All of the eight natural permanent waterholes are situated in or near the beds of the main molapos. During the summer months, when temporary pools develop at a distance from permanent water, the Bushmen can move out to live at them. Except for a few weeks each year, the Bushmen spend their entire lives camped within an hour's walk of standing water. Only at the end of the dry season do some of the younger people undertake the long trips to the dry forests where they live by digging out the water-bearing roots. Since it is the custom of the Bushmen to return each evening to their main camps, it follows that areas within a single day's walk of standing water will be intensively utilized. Areas that lie beyond this radius will be rarely utilized even though they may be rich in food. The fact that the Bushmen can live well for most of the year within a six-mile radius of permanent water indicates that they do not lead a nomadic way of life. Each summer they move up-country to the seasonal waters and each winter they fall back on their permanent waterholes. In contrast to some Australian aboriginal groups, whose annual round consists of walking a circuit of many waterholes, the Dobe area Bushmen have a

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361 transhumant annual round, in which they alternate between their rainy season range and their dry season range.

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628 The Dobe area !Kung do not undertake long marches of 30-70 miles for the purpose of getting food. This task can be readily fulfilled within a day's walk of their territorial water sources. When such long marches occur, they are invariably for the purposes of visiting, trading, and marital exchanges with relatives at distant camps. As such, these trips should not be confused with the normal routines of subsistence.

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162 Range Size and Population Density -- By plotting the movements of the various camps in their annual subsistence cycle, the observer can derive a rough estimate of the total land area that is required to support the population of 430 Bushmen. It would be much more difficult to estimate the area necessary to support a single camp, because of the considerable overlap of territories and the frequent visiting between camps. It will be more useful to treat the entire population as a unit. It is estimated that the 800 square miles that lie within a six-mile radius of major water sources are sufficient to support the population for most of the year. Beyond this radius lies a hinterland which is rarely penetrated; perhaps a further 200 square miles of this hinterland is utilized in the course of a single year. Thus the total annual range of the Dobe area Bushmen may be estimated at 1,000 square miles. This calculation sets the effective population

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162 density at ca. 43 persons per 100 square miles, or two-and-a-half square miles per person. This is a rather high density figure for desert-living hunters and gatherers. The higher figure is partly due to the fact that it represents the ratio of population to the actual land area utilized. This is a more meaningful way of expressing density than is a figure based on the ratio of population to the total land area that it appears to occupy. For instance, on a map, the Dobe area covers about 2,700 square miles, but the Bushmen actively utilize less than 40 per cent of this area. It is suggested that estimates of population density for other hunting and gathering peoples would give accordingly higher values if the criterion of actual use was employed in the calculation.

Conclusion

433 These eight lines of evidence constitute the case for a revision of the anthropological view of the Bushmen. Their way of life is not impoverished or precarious. Considering the environment in which they live, the Dobe area !Kung Bushmen lead an unexpectedly comfortable and secure existence. The evidence set out here assumes an added significance because this security of life was observed during a period of severe drought. Consequently the author witnessed the worst conditions that the !Kung would have to face. One can speculate that their

433 subsistence base would be even more substantial during a year of higher rainfall. The Kalahari desert is by any account a marginal habitat for human occupation. Nevertheless it is apparent that the people who live there can satisfy their subsistence needs with a reasonable amount of effort and within a short compass of their waterholes.

The Subsistence Base of Other Hunter-Gatherers

It remains to be considered whether the !Kung Bushmen are exceptional among hunters and gatherers in that they have an unusually reliable subsistence base in the form of the mongongo nut.

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433 A brief survey of the living hunting and gathering peoples indicates that the !Kung are quite typical of the general picture. For instance, the coastal Tierra del Fuegians, the California Indians, the Strandloopers of South Africa, and the Australian aborigines of Arnhem Land, the Cape York Peninsula, and New South Wales all possessed a superabundant staple of marine resources, especially shellfish. In the interior of California the acorn was the superabundant staple. Even the lowly Shoshoneans of the Great Basin who, because of scarce resources, were forced to exist at the "family level of organization" possessed a superabundant staple in the form of piñon nuts (Steward 1955). These nuts were so abundant that quantities could be collected and stored sufficient to last through the winter. Furthermore, the winter encampments typically consisted

171 of 20 or 30 families living in one locality (Steward 1955:105).
• 433 Such a camp would contain upwards of 60 people and therefore would have been as large as the larger of the Dobe Bushmen winter camps. Even larger aggregations occurred among the Shoshone on the occasion of the communal rabbit hunts. In light of this, one suspects that the subsistence basis of the Shoshone was more secure than their ethnographer was prepared to allow.

It is not known what the staple food resource of the desert aborigines of Australia may have been, but there is compelling evidence that such a staple did exist. This is based on the fact that groups of 300-500 Aranda and Walbiri have been observed to congregate for four to five months at a time (Strehlow 1947:65; Meggitt 1962:55). Such concentrations of population could not have been possible without a super-abundant source of food.

It is suggested that the literature on the living hunters and gatherers of the world deserves to be reconsidered in light of this abundant food base. It appears that anthropologists have tended to underestimate hunting and gathering as a viable and persistent way of life. Despite the fact that non-agricultural peoples today are confined to the least attractive habitats of the world, there is evidence that human ingenuity, such as that displayed by the Dobe area Bushmen, can produce a substantial living from even the most unpromising environments.